

AMENDMENTS TO THE CLAIMS

Claims 1–39 (canceled)

Claim 40 (currently amended) A laser driving device for driving a semiconductor laser, comprising:

an operating voltage detecting circuit connected to said semiconductor laser for detecting an operating voltage of the semiconductor laser;

a voltage converter connected to said operating voltage detecting circuit for converting an input second voltage input from an external power supply into a first voltage greater than the input second voltage on the basis of the detected operating voltage; the input second voltage being the only externally supplied highest-voltage input to the laser driving device;

control means for generating control signals to control the laser driving device; the control means being powered by the input second voltage; and

a laser driving circuit connected to said voltage converter, said semiconductor laser, and said control means for driving the semiconductor laser on the basis of the first voltage from the voltage converter and the control signals from said control means.

Claim 41 (previously presented) The laser driving device according to claim 40, wherein the semiconductor laser emits a short-wavelength violet laser beam.

Claim 42 (previously presented) The laser driving device according to claim 40, wherein the second voltage is 5V and the first voltage is between 8V and 10V.

Claim 43 (previously presented) The laser driving device according to claim 40, wherein the operating voltage detecting circuit includes a hold circuit for detecting and holding an operating voltage of the semiconductor laser on the basis of a hold control signal and a hold voltage initial value; and wherein the voltage converter adjusts the first voltage converted from the input second voltage on the basis of the held operating voltage.

Claim 44 (previously presented) The laser driving device according to claim 40, wherein the control means includes:

- an emission power detector for detecting an emission power from the semiconductor laser;
- a controller for generating a reference power and control signal and a data signal;
- an encoder and write processor for generating a write timing pulse on the basis of the data signal; and
- an automatic power control circuit for generating a power control signal on the basis of the detected emission power, the reference power and control signal, and the write timing pulse;

the semiconductor laser being controlled on the basis of the second voltage, the power control signal, and the write timing pulse.

Claim 45 (currently amended) A method of driving a semiconductor laser with a laser driving device, comprising the steps of:

- detecting an operating voltage of the semiconductor laser using an operating voltage detecting circuit connected to said semiconductor laser;

converting an input second voltage input from an external power supply into a first voltage greater than the input second voltage on the basis of the detected operating voltage using a voltage converter connected to said operating voltage detecting circuit; the input second voltage being the only externally supplied voltage to the laser driving device~~highest voltage input to the device~~;

generating control signals for controlling the ~~semiconductor laser~~ driving device using a controller; the controller being powered by the input second voltage; and

driving the semiconductor laser using a laser driving circuit connected to said voltage converter, said semiconductor laser, and said controller on the basis of the first voltage from the voltage converter and the control signals from said control means.

Claim 46 (previously presented) The method according to claim 45, wherein the semiconductor laser emits a short-wavelength violet laser beam.

Claim 47 (previously presented) The method according to claim 45, wherein the second voltage is 5V and the first voltage is between 8V and 10V.

Claim 48 (previously presented) The method according to claim 45, wherein the detecting step includes a step of detecting and holding an operating voltage of the semiconductor laser on the basis of a hold control signal and a hold voltage initial value; and wherein the converting step adjusts the first voltage converted from the input second voltage on the basis of the held operating voltage.

Claim 49 (previously presented) The method according to claim 45, wherein the control signal generating step includes the steps of:

- detecting an emission power from the semiconductor laser;
- generating a reference power and control signal and a data signal;
- an encoder and write processor for generating a write timing pulse on the basis of the data signal;
- generating a power control signal on the basis of the detected emission power, the reference power and control signal, and the write timing pulse; and
- controlling the semiconductor laser on the basis of the second voltage, the power control signal, and the write timing pulse.